Music 3SI:
Introduction to Audio/Multimedia App. Programming

Week #3 - 4/21/2006
CCRMA, Department of Music
Stanford University

Last Week...
- Digital audio basics
- Audio API: Stk (RtAudio)
- Stk programming examples
  - signal generator, file I/O, & realtime I/O
  - Online tutorial
- Other APIs
  - PortAudio / ALSA / Core Audio

Other APIs
- PortAudio
  - http://www.portaudio.com
- ALSA: Advanced Linux Sound Architecture
  - http://www.alsa-project.org
- Core Audio

Today...
- Callback function
- Stk instruments / effects
- Error handling
- FFTW
- Assignment #1

Callback: ex7

Duplex: ex8
Stk Effect Classes

- [http://ccrma/software/stk/classEffect.htm](http://ccrma/software/stk/classEffect.htm)
  - setEffectMix
  - tick(input_sample)
- Delay-based
  - Chorus, Echo, JRev, NRev, PitShift, PRCRev
- ex9 & ex10
- See Filter classes, too!

Stk Instrument Classes

- [http://ccrma/software/stk/classInstrmnt.htm](http://ccrma/software/stk/classInstrmnt.htm)
  - noteOn / noteOff
  - setFrequency
- Mostly physical modeling
  - BlowBotl, Bowed, Brass, Clarinet, FM, Plucked, ...
- ex11

Error Handling

- Exception handling
  - try { } catch { }
- RtError
  - [http://ccrma/software/stk/classRtError.htm](http://ccrma/software/stk/classRtError.htm)
  - ex12

Assignment #1

Due 5/5/06

Truth About A1

- See ex9, ex10 (and ex11)
- Have fun with optional features!
- Don’t panic!
  - ask me any questions you have!
  - prove that you understand what’s going on!
- Office hours
  - Mon 1 - 3 pm, Tue 11 am - 1 pm (email)
  - or by appointment

Next Week On Music 3SI

- Recap
- IDE
- VST Plug-ins
- Max/MSP or Pd externs